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ABSTRACT

A person can communicate more accurately by possessing a rich vocabulary, be it in listening, speaking, reading, or writing. Then too, students need a well developed vocabulary which is integrated across the entire curriculum. This paper focuses on the plethora of vocabulary terms in diverse curriculum areas, including social studies, science, mathematics, and language arts. The paper discusses disciplines in each curriculum area in turn and suggests strategies to develop a strong and relevant vocabulary knowledge for each one. It states that the teacher needs to provide a variety of learning opportunities to assist student vocabulary development achievement, and that these learning opportunities should do the following: they should be engaging and involving; they should increase student interest in achieving instructional objectives; they should develop student purpose for learning; they should encourage learning motivation; they should provide for individual learning styles and intelligences; they should help students to become lifelong learners; and they should assist students to evaluate their own progress. (Contains 10 references.) (NKA)

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Vocabulary Development and the Curriculum.

by Marlow Ediger

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VOCABULARY DEVELOPMENT AND THE CURRICULUM

Pupils need to continually strengthen their vocabularies. Why? A person can communicate more accurately by possessing a rich vocabulary be it in listening, speaking, reading, and writing. Then too, pupils need a well developed vocabulary which is integrated across the entire curriculum. People are limited what they can learn if a weak vocabulary is in the offing. What is listened to then just does not make sense in selected cases. An improved listening vocabulary improves comprehension of diverse ideas presented by the speaker. The chances are that the improved listening vocabulary makes for more effective oral communication. What one hears then can make for an improved speaking vocabulary. Words in oral communication might then be more precise and accurate in the spoken phase of learning. Listening and speaking effectively can make for background learnings necessary to develop reading proficiency. Quality reading does not occur in a vacuum, but is dependent upon rich personal experiences, gained through listening and speaking. A good reading vocabulary should then be in the offing. The listening, speaking, and reading vocabularies form the basis for having something to write about. Ideas are badly needed when writing subject matter for others to read.

Vocabulary Development Across the Curriculum

There are a plethora of vocabulary terms in the diverse curriculum areas. Social studies, as a curriculum area, has many vital and relevant vocabulary terms for pupils to master and use contextually. There are selected social science disciplines which provide content for the social studies. These, generally, include history, geography, political science, economics, anthropology, and sociology. In a unit on "The Middle Ages, vital vocabulary terms for pupils to attach meaning to in history include manor, noblemen, slave, serf, oath, knighthood (page, squire, knight), the guild (apprentice, journey man, master), castle, moat, draw bridge, and horsemanship.

In geography within the social studies, the following are relevant for pupil mastery: latitude, longitude, meridians, parallels, degrees, time zones, map projections, globes, arctic, antarctic, equator, as well as North and South Pole. Vital political science vocabulary terms include state and federal government, Bill of Rights, voting, candidates, democracy, citizenship, community service, civiic responsibilities, laws,

executive, judicial, and congress. Economics vocabulary deemed worthy for pupil study include the following: goods, services, economy, assembly line, cost efficient, automation, robots, consumer wants and needs, capitalism, socialism, choice, gross national product (GNP), labor, management, markets, and workers. Anthropology and sociology vocabulary terms include: culture, customs, socioeconomic levels, norms, folkways, mores as well as other human made parts of the environment (music, art, sports, architecture, food, clothing, and language (Ediger, 2000, Chapter Thirteen).

Vocabulary development must be emphasized across the curriculum. Each of the above named concepts should be studied and developed indepth by pupils. Depth teaching may stress a deductive approach. With deduction, clear and concise explanations must be given. It is good to use, when feasible, concrete and semi-concrete materials of instruction when the related vocabulary concept is being discussed. A lecture, as a deductive approach is not recommended due to the length and lack of meaning when using this approach. The author when attending a teacher education convention listened to a speaker who said he never told an answer to a question raised by pupils. This speaker when teaching pupils in the classroom would respond to the question with another question! He said that was an inductive procedure. When reminiscing about personal public school years, I felt that a teacher's brief explanation to my question is what was wanted, not another question. With a very brief explanation to a question, the author as a child felt he could move forward with the next sequential step of learning.

With inductive learning, the teacher, for example, raises a question such as "What is meant by the concept culture? A brain storming session may be held and each response from pupils written on the chalkboard. An important rule is to listen carefully and not duplicate answers given. One pupil at a time may respond and all responses need to be respected. After pupils have run out of responses, the pupils might well summarize the ideas written on the chalkboard. Ultimately, a general definition may be secured of what is meant by "culture." If pupils did not respond with meaningful possibilities, the teacher may use a deductive method with more explanations and increased direction in terms of what pupils are to learn in vocabulary development. Inductive learning emphasizes the following methods:

1. it is pupil centered with ideas for teaching and learning coming from children with teacher guidance.
2. It is largely paced by pupils in terms of sequential

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learning.

3. It is based on using a variety of materials of instruction such as the concrete, the semiconcrete, and the abstract. Using the concrete (actual objects, realia, and items to refer to the vocabulary term), the semi-concrete (illustrations, pictures, filmstrips, slides, films, videotapes, and video disks), and the abstract (cassette recordings, discussions, reports, written work, listening, and reading) should all occur simultaneously, if possible. For example, the author likes to show a model and a series of slides for pupils to understand "Mosque" as a vocabulary term. The teacher may not have a model (the concrete) to show the meaning of a vocabulary term, but can show one or more pictures (the semiconcrete) pertaining to the vocabulary term being discussed (the abstract). The teacher needs to be certain that pupils are attending and paying attention to the ongoing learning opportunity in vocabulary development as well as toward other learnings.

Deductive learnings are more teacher centered as compared to inductive methods. With deduction, the teacher needs to have ample concrete and semi-concrete materials to use in sequence. There will be less feedback from pupils with deductive approaches in teaching as compared to induction. The teacher needs to be certain that pupils are paying <u>much</u> attention to the ongoing learning opportunity in vocabulary development, as well as toward all instruction. Pacing must be done on what appears to be situations in which pupils respond to questions which the teacher raises. Pupils responding to questions provides needed feedback to the teacher as to what has/has not been learned. Pupils should be able to meaningfully define words as well as use them properly in a contextual manner. Developing a personal vocabulary notebook is useful to many pupils wherein newly encountered words are listed alphabetically with the definition given for each as well as the word being presented within sentence form. New words may be added to the notebook as they are learned. Pupils then feel rewarded as the number of new vocabulary words are mastered in meaning and use. This notebook becomes a handy reference source for the learner (Ediger and Rao, 2003, Chapter Eleven).

Terms which need special attention in social studies are the following:

1. technical terms which are peculiar to an academic discipline but used very infrequently in other subject matter areas such as latitude and longitude in geography.

2. figurative terms such as "political platform." This term does not apply to standing on a platform, but stresses what, for

example, are key beliefs which either democrats or republicans stand for during an election season.

3. words with multiple meanings such as "revolution." A revolution can occur in new ideas adopted and implemented, as well as an actual war, like the revolution of the American colonists against the British, 1776- 1781.

4. terms peculiar to a given locality such as the prairies, borough, butte, mesa, and potlatch.

5. words confused with other words such as principal and principle, conservation with conversation, capital with capitol, and state for nation.

6. acronyms which are abbreviated expressions such as NATO, OPEC, UNICEF, and NOW.

7. quantity terms such as "soon after," "several years later," and MADD (Parker, 2001).

It is important for pupils to reflect upon vocabulary terms acquired. By reflecting upon these words, they become a part of the pupil. Use is made of these terms in a variety of ways. The more useful they become, the sooner new vocabulary terms become a part of the learner. A major goal of pupils should be to extend and learn indepth that which has value and is utilitarian. New vocabulary words acquired should be

1. relevant according to the developmental level of the child.
2. challenging to the learner.
3. valuable and meet the personal needs of the pupil.
4. purposeful and possess reasons for their learning.
5. presented in an interesting manner.
6. acquired in a contextual setting.
7. used in a variety of settings.
8. achieved in situations involving a personal style of learning.
9. acquired across the curriculum.
10. applied in school as well as in the societal arena (See also, Piro, 2002).

Developing the Science Vocabulary

In diverse science lessons and units of study, the teacher needs to select new vocabulary terms, for pupil mastery, which are developmental and useful. The following should be acquired meaningfully within the framework of meeting learner needs.

1. cells (the basic unit of life), monera (bacteria, blue green algae), protists (tiny plants and animals called plankton, blue

and brown algae, euglenas, protozoans, amebas), Fungi (yeasts, molds, mushrooms, antibiotics).

2. plants --- mosses, ferns, seed plants (angio sperms and gymnosperms).

3. animals without backbones (sponges, jelly fish and portuguese man of war; worms -- flat, round, and segmented; mollusks--- oysters, clams, snails, squids, and octopus; joint legged --crayfish, shrimp, and crabs; spiders, ticks, and mites; and insects with three pairs of legs, as well as having a head, thorax, and abdomen), and spiny skinned animals --- sea urchins, sand dollars, and sea cucumbers.

4. animals with backbones--- fish (scaly skins, two chambered heart, breath through gills and later through lungs, cold blooded, and lay shelless eggs.); amphibians (frogs, toads, newts, snakes, and salamanders) have three chambered hearts, are cold blooded, live in water and on land; reptiles have lungs, have three or four chambered heart, scaly skin, and lay eggs covered with a thick shell. Birds have four chambered hearts, breath with the use of lungs, possess feathers, and have the highest body temperature reading of all animals. Hawks, owls, eagles, and ospreys are birds of prey and keep vemin, among other small animals, down in number. Mammals --- warm blooded, possess hair sweat glands, and nurse their young. They are the only vertebrates to possess a diaphragm, and have the most complex brain structure of all mammals. Some are meat eaters (lions, tigers, and wolves) while others are plant eaters (cow, camel, horse (Blough and Schwartz).

Vocabulary terms in science must be selected carefully so that pupils achieve vital learnings. The learnings must be ordered properly with concrete, semiconcrete, and abstract learnings, along with the following guidelines for teaching and learning:

1. a hands on approach needs to be used in the instructional area with pupil involvement in experiments and demonstration. Careful observation is necessary to science phenomenon

2. salient facts, concepts, and generalizations should be emphasized in ongoing lessons and units of study.

3. inductive procedures should be stressed heavily in the instructional arena.

4. written work should reflect the outcomes of pupil achievement such as in journal writing, diary entries kept, reports written, outlines developed, and logs kept of ongoing learning activities.

5. literature read should come from diverse sources such as the basal textbook, library books, reference books, and journals.

6. listening skills need further development such as in comprehending adequately ideas from discussions, committee work, cassette recordings, DVDs, and CD ROMs.

7. skills need to be adequately achieved in individual, small group, and large group work. An attitude of caring and assisting others to achieve well is inherent.

8. wanting to learn more in science is a vital affective end for pupil achievement.

9. showing optimal quality in doing science in the curriculum.

10. assessing the self in terms of recommended standards and using the results as feedback to improve learning and achievement (Ediger and Rao (2001, Chapter Three).

Developing a Mathematics Vocabulary

The mathematics vocabulary of pupils is generally developed within the subject matter being discussed. For example, the following vocabulary terms are acquired in ongoing discussions as pupils are achieving new objectives: addend, sum; minuend, subtrahend, difference; factor, product; dividend, divisor, and quotient; point, line, line segment, ray, sets, subsets, square root, cube root; length, width, area, volume; square, triangle, rectangle, parallelogram, circle, rhombus; cube, rectangular solid, triangular solid, cone, pyramid, cylinder. Pupils need to understand each vocabulary term indepth within the framework of seeing a visual representation of the geometrical figure, as it is being discussed. Depth teaching indicates that a pupil use a mathematics term in a variety of developmental situations. Uses of vocabulary terms can be made in discussions, in peer and committee work, in problem solving activities, in games, and in society.

Intellectuals and thinkers all over the world view education as a crucial factor in raising the standard of living all over the globe. Education being a sub-system of the larger social order is always under review for adjustment. This process is accelerated today because of the very fast changes which are occurring in various directions. A serious review and transformation of the ongoing educational systems in various parts of the wold is unavoidable for the very survival of man. With its ramification, the transition from the traditional to the futuristic setting is not so easy. It has thrown many challenges to the educational

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planners, particularly in the third world. In spite of it, striving for excellence in education has marked the efforts a reorganization everywhere for the past decade or two (Premila, 2001).

Quality objectives, learning opportunities, and assessment procedures need to be carefully chosen and implemented.

A variety of assessment procedures need to be used since each approach is a check on the other. Thus state mandated, as well as teacher written tests may be used such as essay, multiple choice, true-false, completion, and matching. Daily evaluation results may become a part of a portfolio developed by the pupil with teacher guidance. The portfolio with its randomized compilation of pupil work might then be shared with parents so that the latter may notice how to assist the child to achieve more optimally.

Computer use of routine scoring of objective test items saves teacher time and talent for actual teaching. Computerized scoring, though, has its weaknesses:

A Massachusetts social studies teacher who caught a mistake on the state's assessment exams is a new hero in the eyes of hundreds of 8th graders.

John J. Gibbons Jr., a 49 year old social studies teacher at Clinton Middle School in Clinton, Massachusetts, discovered a question on the Massachusetts Comprehensive Assessment System 8th grade history exam which had two correct answers. The multiple choice question asked students to identify the powers granted to congress by the US Constitution. Two correct answers --- enacting laws and collecting taxes --- were listed. But when the exam was scored, only the choice for enacting laws was deemed correct.

Mr. Gibbons contacted the department and explained the error. Now 666 students who thought they had failed the exam had their scores bumped to passing, and about 14,000 who took the test will see their scores increase (Gehring, 2002).

Reading and the Language

Vocabulary development in the language arts is vital in order for pupils to become increasingly proficient in listening, speaking, reading, and writing. These four vocabularies cut across all academic and curriculum areas. There are a variety of ways to assist pupils in vocabulary development in contextual situations within the reading/language arts connection such as

1. reading orally to pupils
2. having pupils engage in discussions
3. participating in ongoing activities at the listening center

4. reading library books
5. participating at the audio visual center
6. being involved at the writing center
7. making pictured dictionaries
8. engaging in story telling
9. using dictionaries and the glossary
10. taking turns reading orally in small groups
11. being involved in individualized spelling
12. participating at the speaking center
13. discussing objects at the interest center
14. viewing an aquarium and a terrarium in the classroom.
15. taking care of potted plants in the classroom
16. participating at the dramatization and puppet center

(Ediger and Rao, 2003, Chapter Nine).

The above named varied learning opportunities should assist pupils to achieve more optimally in vocabulary development.

In Conclusion

The teacher with principal support needs to provide a variety of learning opportunities to assist pupil vocabulary development achievement. These learning opportunities should do the following:

1. they should be engaging and make for active pupil involvement
2. the should increase the interests of pupils to achieve objectives of instruction
3. they should develop pupil purpose for learning
4. they should encourage motivation for learning
5. they should provide for individual learning styles as well as intelligences in the classroom
6. they should emphasize quality learner sequence in achieving objectives of instruction.
7. they should increase pupil initiative for learning
8. they should help pupils to become life long learners
9. they should guide optimal learner progress in knowledge, skills, and attitudinal objectives
10. they should assist pupils to evaluate their very own progress (Ediger, 2002, 90- 95).

The objectives of instruction should provide important benchmarks for pupils to achieve in vocabulary development. They need to be chosen carefully and meticulously to guide

optimal achievement. Learning opportunities need selection which guide pupils in achieving the stated intents. Evaluation of pupil achievement in vocabulary achievement should be ongoing and continuous.

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